REMARKS

Applicants acknowledge receipt of the *Office Action* dated June 14, 2005 wherein claims 1, 3-10, 31, 37-56 and 71 were rejected under 35 U.S.C. § 102(b); and claims 2, 32-36 and 62-70 were rejected under 35 U.S.C. 103(a).

Status of the Claims

Claim 1 and claim 62 are currently amended.

Clams 2-61 and 63-71 are in original form.

Claims 11-30 and 57-61 have been withdrawn from consideration.

Previous Restriction Requirement

The *Office Action* notes the Applicant's election of the species corresponding to Figure 4 for prosecution on the merits, and the Patent Office requests a listing of any claims readable on Figure 4. In response, Applicant respectfully submits that independent claims 1, 62 and 71 are each readable on the species of Figure 4. In addition, dependent claims 2-10, 15-20, 24-26, 29-56, 61, and 63-70 are each specifically readable on the species of Figure 4.

The Patent Office has withdrawn from consideration non-elected claims 11-30 and 57-61 directed to other species identified by the Patent Office. However, Applicant reserves the right to prosecute such claims in the current application upon the allowance of a generic claim, or in a later-filed divisional or continuation application.

Claim Rejections under 35 U.S.C. § 102(b)

Claims 1, 3-10, 31, 37-56 and 71 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. Re. 35,866 to Simmons (hereinafter *Simmons*). *Simmons* discloses a fountain system that is designed to produce changing water displays using nozzles 20, 26, 30, 35. A valve 40, 40A, 40B with an internal valve element 46, 46A is used to control and vary the distribution of water flow to the nozzles. Referring to Figures 4 and 5, one embodiment of the valve 40 comprises a cylindrical valve body 41 that is open at one end 40b and includes

coaxially aligned outlet pairs 42, 43, 44, 45. Each outlet 42-45 of the valve body 41 is connected to a nozzle supply conduit, such as conduits 23, 24 of nozzle 20 as shown in Figure 1. A valve element 46 with a plurality of lateral openings 47, 48, 49, 50 fits snugly within the valve body 41 and includes an open end 46a that receives the pressurized fountain liquid (col. 4, lines 4-19). A valve stem 52 extends upwardly from the valve element 46 through the upper end 40a of the valve body 41. A first motor 56 rotates the valve element 46, and a second motor 65 moves the valve element 46 axially via the valve stem 52 (col. 4, lines 34-67).

In operation, as the motors 56, 65 impart rotation and linear axial movement to the valve element 46, the lateral openings 47-50 are moved into periodic fluid communication with one or more pairs of the valve outlet ports 42-45 to control and vary the distribution of the fountain liquid to the nozzles (col. 1, lines 51-57). Therefore, the timing and amount of fountain liquid delivered to the different nozzles varies so as to produce constantly moving images (col. 1, lines 57-67).

As set forth in MPEP §706.02(IV), in order for a reference to anticipate the invention as claimed, the reference must disclose each and every element recited in the claims. Applicant respectfully submits that *Simmons* fails to anticipate claim 1 at least because *Simmons* does not disclose a flow arrangement between a selective interrupter and a body; wherein rotating the selective interrupter proportionally transitions a flow relationship between a first flow path and a second flow path. Due to the shapes and sizes of the *Simmons* valve element openings 47-50 and the valve body outlets 42-45, as well as the quantity of such openings 47-50 and outlets 42-45, the flow relationship will necessarily transition non-proportionally among many different flow paths when the valve element 46 is rotated. *Simmons* explains that the speed of rotation of the motor 56 and the relative shapes of the valve element openings to the aligned valve body outlets will control the degree of fluid communication (col. 4, lines 37-45). Rather than proportionally transitioning a flow relationship between a first flow path and a second flow path according to claim 1, the *Simmons* valve 40 is specifically designed to vary the timing and the amount of fountain water delivered to nozzles to effect the output and movement of the stream dispersed by the nozzles (col. 1, lines 60-63). Accordingly, independent claim 1 is not anticipated by *Simmons* because *Simmons* fails to disclose each and every element recited in claim 1. Further,

claims 3-10, 31 and 37-56 are also in condition for allowance over *Simmons* at least because each of these claims depend from allowable claim 1.

Simmons also fails to anticipate independent claim 71 at least because *Simmons* does not disclose a valve wherein rotation of a selective interrupter redirects, without interrupting, a pneumatic flow to an instrument according to claim 71. First, the *Simmons* valve 40 does not redirect a pneumatic flow to an instrument. Instead, the *Simmons* valve 40 redirects a water flow between different nozzles that project the water into the air in a fountain display. Second, rotation of the *Simmons* valve element 46 within the valve body 41 will interrupt the flow. Specifically, because the valve element openings 47-50 and the valve body outlets 42-45 have non-uniform shapes and sizes, and the valve element 46 includes solid portions between the openings 47-50, flow interruptions will occur as the valve element 46 redirects the water to different outlets 42-45. *Simmons* states that rotation of the valve element "periodically" positions the valve element openings in fluid communication with the valve outlet ports (col. 1, lines 51-55). *Simmons* also describes "an instantaneous flip-flop of the nozzle dispersal stream" (col. 5, lines 12-13), which will momentarily interrupt flow. Accordingly, independent claim 71 is not anticipated by *Simmons* because *Simmons* fails to disclose each and every element recited in claim 71, and in particular, fails to disclose a valve wherein rotation of the selective interrupter redirects, without interrupting, a pneumatic flow to an instrument.

Claim Rejections under 35 U.S.C. § 103 (a)

Claims 2, 32-36 and 62-70 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 2,210,916 to Kenyon et al. (hereinafter *Kenyon*) in view of U.S. Patent No. 5,931,196 to Bernardi et al. (hereinafter *Bernardi).* The Patent Office takes the position that *Kenyon* discloses the claimed invention except for the use of a rotary multi-way valve, and that *Bernardi* teaches such a valve. Therefore, the *Office Action* states that it would have been obvious to one having ordinary skill in the art to substitute the *Bernardi* valve shown in Figure 1 in place of the *Kenyon* valve shown in Figure 2 to provide more effective control of the aircraft actuating fluid.

In response, Applicants respectfully submit that the combination of *Kenyon* and *Bernardi* does not establish a *prima facie* case of obviousness as to pending claims 2, 32-36 and 62-70.

According to MPEP 2142, three basic criteria must be met to establish a *prima facie* case of obviousness:

> First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure.

Even assuming for the sake of argument that the combination of *Kenyon* with *Bernardi* is proper (without conceding such), Applicants submit that no *prima facie* case of obviousness has been established with respect to pending claims 2, 32-36 and 62-70 at least because such a combination fails to teach or suggest all of the claim limitations. Regarding claims 2 and 32-36, neither *Kenyon* nor *Bernardi* teaches or suggests a bonnet, arm and actuator combination according to independent claim 1, from which claims 2 and 32-36 depend. With respect to claims 62-70, neither *Kenyon* nor *Bernardi* teaches or suggests a hollow cylindrical selective interrupter according to independent claim 62, from which claims 63-70 depend.

Kenyon discloses a differential pressure follow-back device operable with a time lag that eliminates the need for a gyroscope responsive to angular velocity of an aircraft. Figure 1 depicts the device, which includes a relay valve 25 connected to a pick-off valve shown in Figure 2. The pick-off valve comprises a semicircular segment 13 enclosed in a housing 18 and rotatably mounted about a shaft 14 (col. 2, lines 24-35). The housing 18 includes ports 21, 22 that are normally closed to an equal extent by the segment 13 (col. 2, lines 36-38). Upon relative tilting of the aircraft and gyroscope (enclosed in casing 1), the segment 13 will uncover the ports 21 and 22 to varying extents, resulting in a rise in pressure in one pipe 24 leading to relay valve 25, and a fall in pressure in the other pipe 26 leading to relay valve 25 (col. 2, lines 43-49). The pipes 24, 26 are connected to diaphragmed chambers 37, 38 at opposite ends of the relay valve 25 to differentially displace a piston 27 therein that controls the flow of oil to a main servo cylinder 29 (col. 2, lines 49-53). As shown in Figure 2, a differential pressure chamber 30 is

provided with a diaphragm 31 that splits the chamber 30 into two compartments. Each compartment connects to pipes 24, 26, respectively, through throttle valves 32, 35 (col. 3, lines 1-10). Diaphragm 31 connects to the housing 18 such that movement of the diaphragm 31 rotates the housing 18 around the segment 13 to restore the ports 21, 22 to the balanced position, the housing 18 being normally centralized by opposing springs 42 (col. 3, lines 18-25).

In operation, as long as the aircraft maintains its proper attitude, no relative movement occurs between the housing 18 and the segment 13 of the *Kenyon* pick-off valve (col. 3, lines 26-29). However, if one wing is depressed, the housing 18 will rotate with respect to segment 13, resulting in an immediate differential pressure being established in the pipes 24, 26 to move the piston 27 of the relay valve 25. This will cause pressure to build in one compartment of chamber 30 and drop in the other compartment at a rate dependent on the adjustment of the throttle valves 32, 35. After a time lag, the diaphragm 31 will move the housing 18 in a direction to reduce, remove or even reverse the signal before the airplane returns to its original attitude, thus effectively damping oscillations of the craft (col. 3, lines 31-51). Therefore, the pick-off valve shown in Figure 2 of *Kenyon* is a pressure-sensitive, diaphragm driven valve designed to direct pressure to one side or another of the relay valve 25 through pipes 24, 26.

Bernardi teaches a bypass valve 10 for use in water treatment systems. The valve 10 is designed to connect an untreated water source to a water softener device, which in turn is connected to plumbing fixtures for use of the treated water (col. 1, lines 12-15). The valve body 12 includes service inlet and outlet ports 30, 28, respectively, and valve inlet and outlet ports 36, 34, respectively (col. 3, lines 23-43). The valve body 12 also has a pair of blending ports 46 that allows for the introduction of untreated water into the service inlet 30 (col. 3, lines 59-63). An elongated spool 16 is positioned within the valve body 12 for rotation therein between a service position and a bypass position. The spool 16 is provided with a block end 98 to engage a mechanism to rotate the spool 16, such as a handle 100 (col. 4, lines 55-60). Curved lands 52, 56 on the spool define flow passages between the valve inlet port 36 and the service outlet port 28, and between the service inlet port 30 and the valve outlet port 34, respectively (col. 4, lines 13-34). Figure 3 shows the spool 16 in the service position wherein flow is permitted through passages 78, 80 formed by the curved lands 52, 56. As shown in Figure 2, a bypass passage 136

is located on the spool 16 opposite the curved lands 52, 56 and provides fluid communication from the service inlet port 30 to the service outlet port 28. In the bypass position, service ports 28, 30 are closed off from the valve ports 34, 36 (col. 5, lines 47-61).

Applicant respectfully traverses the rejection of claims 2 and 32-36 at least because these claims each depend from and incorporate the limitations of independent claim 1, and the *Kenyon* and *Bernardi* references, either alone or in combination, fail to teach or suggest all of the claim limitations. In particular, these references fail to teach or suggest a valve comprising a body, a selective interrupter, a bonnet connected to the body and in contact with the selective interrupter, an arm extending through the bonnet and connected to the selective interrupter, and an actuator movably connected to the arm. Neither of these references discloses a bonnet, arm and actuator combination according to claim 1. Thus, at least for these reasons, Applicant respectfully submits that dependent claims 2 and 32-36 are not obvious in view of the combination of *Kenyon* and *Bernardi*.

Applicant also respectfully traverses the rejection of claims 62-70 at least because the combination of *Kenyon* and *Bernardi* fails to teach or suggest all of the limitations of independent claim 62. In particular, even assuming for the sake of argument that it would be appropriate to substitute the *Bernardi* valve for the *Kenyon* pick-off valve as asserted by the Patent Office, this combination neither teaches nor suggests a hollow cylindrical selective interrupter positioned inside a body for rotation therein. The *Kenyon* pick-off valve includes a solid semicircular segment 13 rotatably positioned within the housing 18, and the *Bernardi* bypass valve 10 includes a spool 16 rotatably positioned within the body 12, the spool 16 comprising a spool end 50, a first curved land 52, a central spool portion 58 with a plurality of slots 60, a second curved land 56, and a spool end 54. Thus, neither the *Kenyon* segment 13 nor the *Bernardi* spool 16 is a hollow cylindrical selective interrupter according to claim 62.

Further, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the *Kenyon* reference by replacing the pick-off valve with the *Bernardi* bypass valve 10. As described above, the *Kenyon* pick-off valve is employed in a pneumatic aircraft system, and the *Bernardi* bypass valve 10 is employed in a water treatment system. Neither of the references suggests that the

Bernardi water bypass valve 10 would be suitable for use in a pneumatic aircraft application. Also, because the technology areas are so non-analogous, one of ordinary skill in the art of pneumatic aircraft valves would not be motivated to replace the *Kenyon* pick-off valve with the *Bernardi* bypass valve 10.

There would also be no reasonable expectation of success if such a modification to *Kenyon* were made. As previously discussed, *Kenyon* presents a diaphragm driven pick-off valve wherein tilting of the aircraft automatically rotates the housing 18 with respect to the segment 13, resulting in an immediate differential pressure being established in the pipes 24, 26 to move the piston 27 of the relay valve 25. Thus, the *Kenyon* pick-off valve is automatically actuated and simultaneously delivers flow, while balancing the flow amount to each end of a relay valve 25 through pipes 24, 26. In contrast, the *Bernardi* valve 10 is a true bypass valve that is selectively actuated to direct water flow either to a service flow path or a bypass flow path. The *Bernardi* valve is not pressure responsive, and is not designed to simultaneously deliver flow along two flow paths, while balancing the flow amount between the two flow paths. Therefore, due to these significant structural and functional differences, there would be no reasonable expectation of success if the *Kenyon* pick-off valve were replaced with the *Bernardi* bypass valve 10.

Accordingly, for all of the foregoing reasons, Applicant respectfully submits that independent claim 62 is not obvious in view of the combination of *Kenyon* and *Bernardi*. Further, claims 63-70 are also in condition for allowance over the combination of *Kenyon* and *Bernardi* at least because each of these claims depend from allowable claim 62.

CONCLUSION

Consideration of the foregoing amendments and remarks, reconsideration of the application, and withdrawal of the rejections is respectfully requested by Applicant. No new matter is introduced by way of the amendment. It is believed that each ground of rejection raised in the *Office Action* dated June 14, 2005 has been fully addressed. If any fee is due as a result of the filing of this paper, please appropriately charge such fee to Deposit Account Number 50-1515 of Conley Rose, P.C., Texas. If a petition for extension of time is necessary in order for this paper to be deemed timely filed, please consider this a petition therefore.

If a telephone conference would facilitate the resolution of any issue or expedite the prosecution of the application, the Examiner is invited to telephone the undersigned at the telephone number given below.

Respectfully submitted,

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